

Recommendations for Allocating Missouri's Retraining Funds Using Local Employment Dynamics (LED) Quarterly Workforce Indicators (QWI)

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Missouri has received the first delivery of data resulting from its participation in the Longitudinal Employer – Household Dynamics Program. This program is done in cooperation with the U.S. Census Bureau. For its part, Missouri provides unemployment insurance employment and wage record data and the U.S. Census Bureau provides confidentiality protection, data storage facilities, data processing, access and training. The data is broken down by selected demographics, by industry and by geographic area. The result of this collaboration is a set of Quarterly Workforce Indicators (QWIs) that can be compared across time. Using these data it is possible to identify industry-wide trends in employment, which policy makers may desire to address.

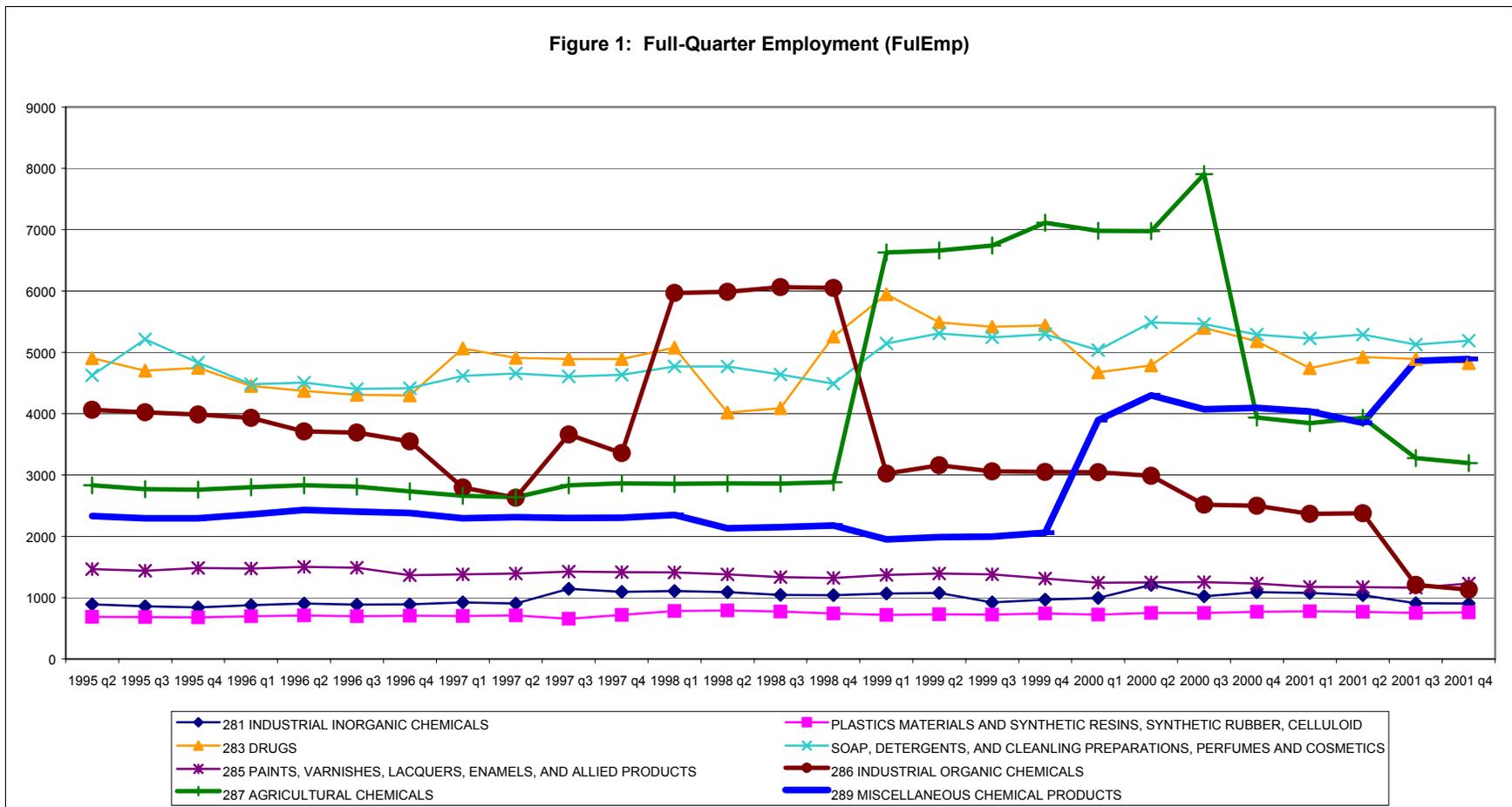
MERIC used Missouri's chemical industry to formulate a method allowing Quarterly Workforce Indicators to suggest industrial sectors where transitional training might be most needed and effective. When applied, this method can help business managers slow an apparent decline in business or market share, or help transition individuals from industrial sectors with declining employment requirements into sectors where their current skills could be employed with minimal additional training. Another goal of this method is to proactively reduce individuals' time spent on unemployment insurance and thereby the state's liability in that area.

QWI: Chemical Industry Full-Quarter Employment

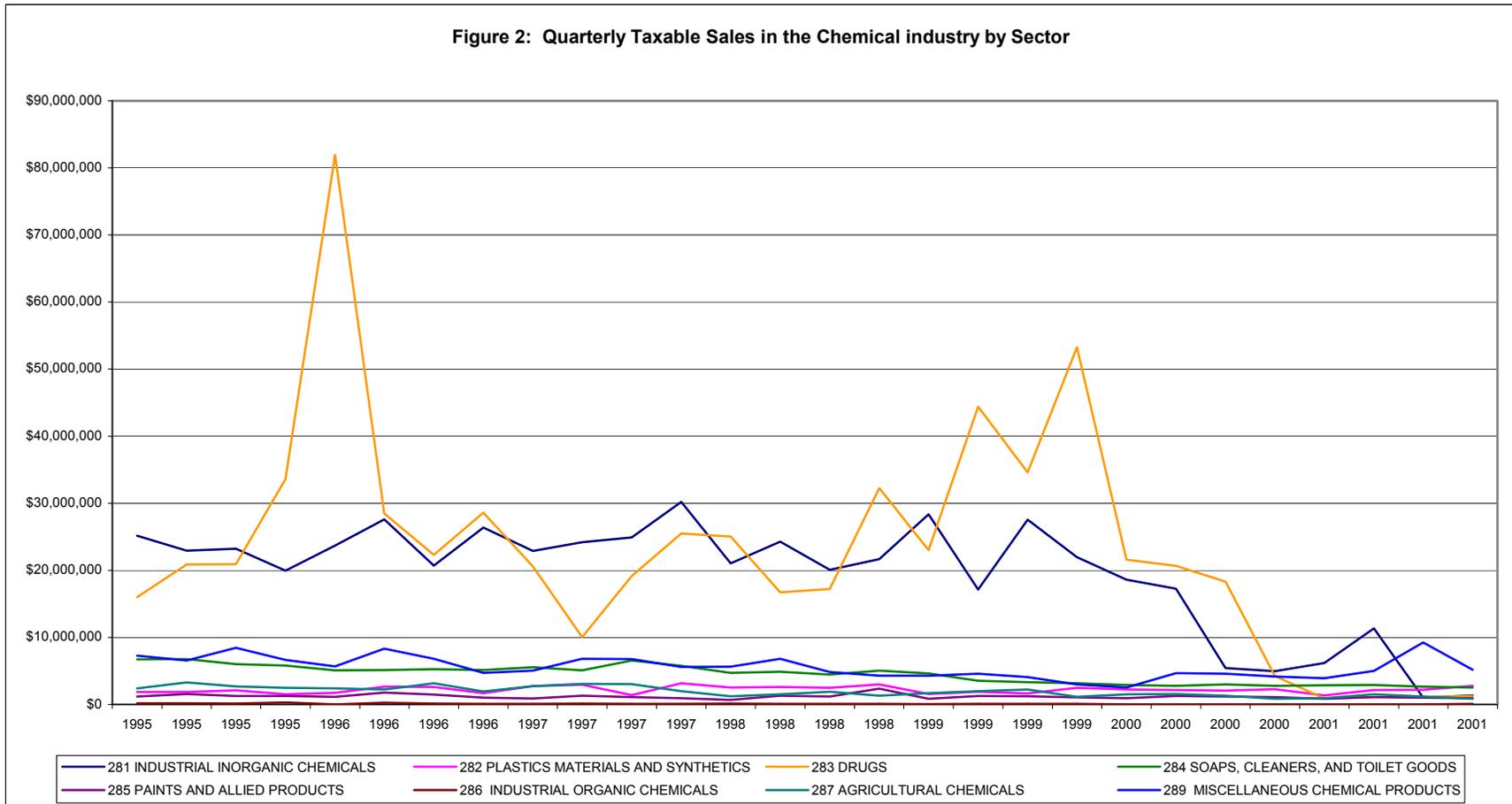
Using the Quarterly Workforce Indicators, Missouri's chemical industry can be divided into three broad sectors:

- (1) Small stable sectors (11.1% of the industry), these include: Industrial Inorganic Chemicals, Plastics Materials and Synthetic Resins, Synthetic Rubber and Celluloid manufacture and Paints, Varnishes, Lacquers, Enamels and Allied Products.
- (2) Large stable sectors (36.5% of the industry), these include: Drug manufacture; and Soap, Detergents, Cleaning Preparations, Perfumes and Cosmetics manufacture.
- (3) Large sectors heavily influenced by a few employers that have had major swings in employment and/or changes in industry coding (52.4% of the industry). These include Industrial Organic Chemicals, Agricultural Chemicals and Miscellaneous Chemical Products. Several large employers in these sectors have had major upturns and downturns in employment, caused by economic business cycles, corporate restructuring, and actual changes in products and activities. Some employment has been re-coded from chemical manufacturing to research, development and testing; as a result, the reported loss of employment may be overstated with some employment now reported in industries other than chemical manufacturing.

The Quarterly Workforce Indicators (QWIs) are designed to investigate jobs that show a certain stability. That is jobs that the employee maintains for at least a full quarter. Figure 1 presents the number of full-quarter jobs by industry sub-sector present in Missouri's chemical industry between 1995 3rd quarter and 2001 4th quarter. The small stable manufactures cluster together along the bottom of Figure 1 around 1,000 employees. The



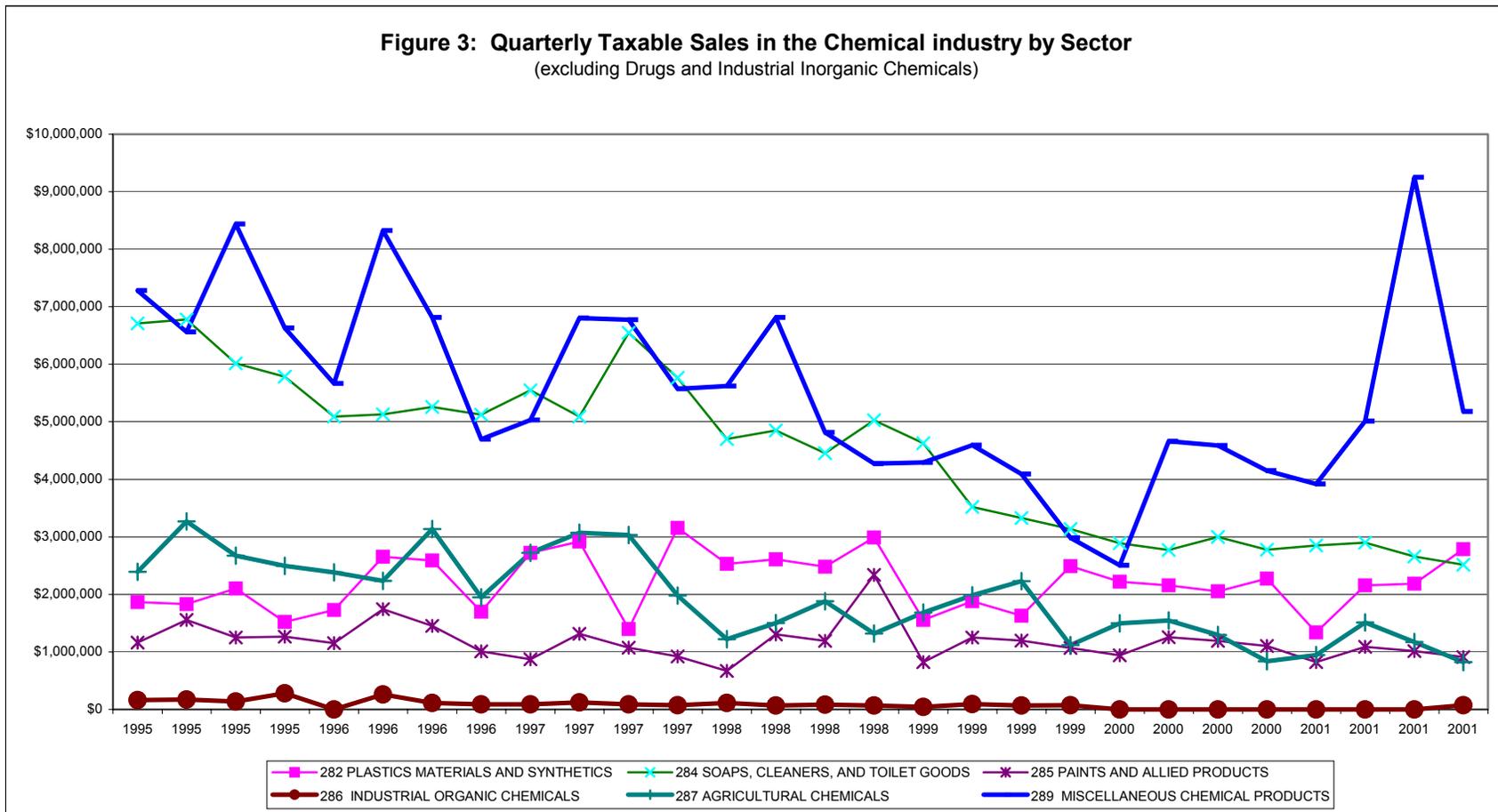
large stable manufactures cluster together around 5000 employees, and the other sectors span the graph. Sharp changes in employment of 2000 or more employees in one quarter are most often due to the recoding of a particularly large employer, or the merger or spin-off of a large sub-unit of such a corporation. The sharp changes in Industrial Organic Chemicals, Agricultural Chemicals, and Miscellaneous Chemical manufacture will be addressed later in this narrative. Figure 2 presents the taxable sales reported by each sector of the chemical industry from 1995 1st quarter through



Source: Missouri Department of Revenue

2001 4th quarter. On the basis of taxable sales, Drugs and Industrial Inorganic Chemicals constituted the largest sectors of Missouri's chemical industry until the recession year of 2001. This analysis along with the decline in employment in the Industrial Inorganic Chemical sector suggests that these two sectors should be monitored to assure a robust recovery from the recession of 2001-2002 because of their importance to Missouri's economy. Figure 3 excludes the two larger sectors so that trends in the smaller sectors can be highlighted. Taxable sales in the Soaps, Cleaners and Toilet products sector have been decreasing through the late 1990's while according to Figure 1, this sector employs more individuals than

Figure 3: Quarterly Taxable Sales in the Chemical industry by Sector
(excluding Drugs and Industrial Inorganic Chemicals)



most of the other sectors in the industry. This combination indicates the possibility of layoffs in this sector, that jobs in this sector may be in jeopardy and that pro-active economic intervention may be indicated to preserve market share for the state's producers and their workers.

The major changes in Figure 1 regarding Industrial Organic Chemicals and Agricultural Chemicals are due to the reclassification of one company's production first into Industrial Organic Chemicals, from there to Agricultural Chemicals and finally from there into management and research services, due to a spin off of a subunit into a separate company. Figure 1 still shows that the Industrial Organic Chemical sector is reducing its demand for employees over time while the Agricultural Chemical sector is increasing in its demand for employees over the same period. This is extremely curious considering that throughout the late 1990's the Agricultural Chemical sector reported annual taxable sales averaging \$80,000. This suggests either danger of economic layoffs in the sector, or that the sector's capacity is going to produce intermediate chemical products used in the production of other final products and sold exclusively to other manufacturing firms rather than to the general public.

Figures 4 and 5 present the age profiles of the Industrial Organic Chemical sector and the Agricultural Chemical sector respectively. The area under each curve in Figure 4 and Figure 5 represents 100% of the workforce in the Industrial Organic Chemical (SIC 286) and Agricultural Chemical (SIC 287) manufacturing sectors. Each curve presents a snapshot of the age profile of the workforce in that sector for a given year. The changes in the curves over time represent progressive changes in the makeup of the workforce. In both sectors a very small percentage of the workforce is under 25, indicating that few employees are hired without some post-graduate education. The steep incline at the 25 to 35 age category confirms this demand. The peak of each successive curve in each chart moves toward the higher age categories every year indicating a gradual aging of these two workforces. The Industrial Organic Chemical sector's workforce is a little younger (37) on average than the Agricultural Chemical workforce (39), but not much.

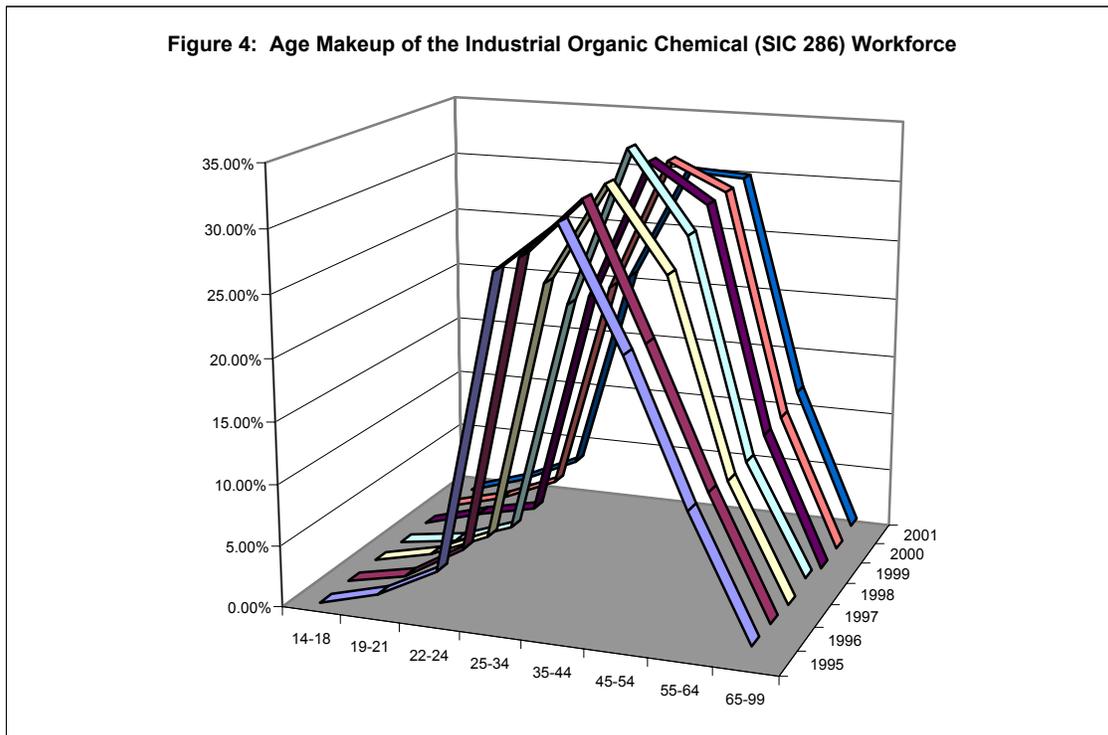
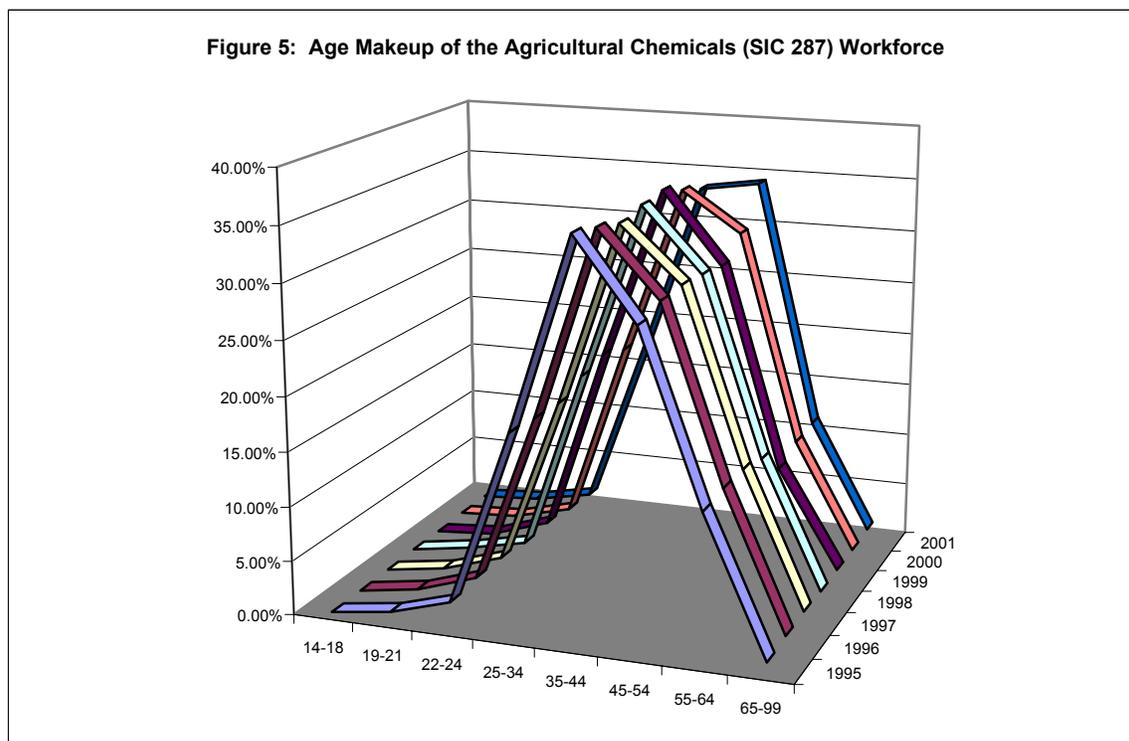


Figure 5: Age Makeup of the Agricultural Chemicals (SIC 287) Workforce



The Industrial Organic Chemical sector is declining in employment and reports stable, but small taxable sales. The Agricultural Chemical sector is increasing in employment, but decreasing in taxable sales. This situation may not be sustainable, whether or not it is, the situation warrants pro-active economic inquiry. The Miscellaneous Chemical Products sector is increasing both in employment and in taxable sales.

- The first recommendation of this analysis is that an effort be made to facilitate employee crossover between the Industrial Organic Chemical sector, the Agricultural Chemical sector and the Miscellaneous Chemical Products sector.

The Drugs and Industrial Inorganic Chemical sectors are important moneymakers for Missouri's economy. The Soap, Cleansers and Toilet Goods sector is also an important contributor to Missouri's employment picture.

- The second recommendation of this analysis is that an effort be made to facilitate the recovery of the Drugs and Industrial Inorganic Chemical sectors from the current recession.
- The third recommendation of this analysis is that an effort be made to understand the trend in declining taxable sales in the Soap, Cleansers and Toilet Goods sector with an emphasis on preventing any loss in the state's market share of this industry, and creating efficiencies of production which will insure Missouri production and jobs.